

PORT DISCOVERY

Children's Museum

STEM Learning at Port Discovery

Concepts of Science, Technology, Engineering and Math (STEM) surround us; they are an important part of everything that happens each and everyday. Watching your shadow, baking a cake, floating in a pool, watching water go down the drain in the bathtub, and even shopping for shoes are all tasks that require use of STEM related skills. Many of our everyday actions involve use of STEM skills. Young children are interested and curious about the world around them and they are natural scientists! Yet ironically, somewhere along the line, many people have LEARNED to be intimidated by STEM subjects. We believe it is our responsibility as an informal learning institution to create opportunities that expand and strengthen children's lifelong love of learning in these areas.

Cultural institutions like children's museums can offer a learning lab atmosphere where children can take abstract issues and make them more concrete.

Exhibits such as **Miss Perception's Mystery House** engage children in problem solving (through collecting clues) to determine what happens to one of four people.

In the **R&D DreamLab**, children work on construction projects as a team, solving problems of design and construction.

The **Wonders of Water** exhibit helps children learn about many scientific concepts including: the water cycle, evaporation, absorption, buoyancy, and water pressure.

Nanoscale Science Exhibit (Sponsored by the NISE Network): Explore hands-on activities to discover the importance of things too small for the eye to see in nanoscale science. Learn how things that are really, really, small display unexpected properties.

Small Wonders Science Time/ Pop Up Science: During *Small Wonders Science Time*, children experience hands-on science activities and experiments based on a variety of themes. Each *Pop Up Science* session features a simple science demonstration by Scientist Sarah where children discover the science behind play.

During Maryland Public Schools' spring break, Port Discovery hosts **STEM in Spring**, a two-week period of special programs dedicated to Science, Technology, Engineering, and Math (STEM). The Museum partners with organizations that specialize in STEM learning, including Howard University Nano Express, MD Bio-lab, NASA, UMBI, and the Society of Toxicology, to engage and spark interest in STEM through interactive, hands-on activities.

Freaky Friday Science Labs: Every Friday, from June through September, Port Discovery has "real" scientists come in and run "minds-on/ hands-on" science labs with the visitors and discuss how science is found everywhere in our world.

Nano Day: Every year, during Maryland's public and private schools Spring Break, one day is dedicated to learning about Nano Technology. The goals for the day are for participants to learn that Nano means very small and that when things become small they behave differently. Participants have the opportunity to board Howard University's Nano Express and use a nano scope as well as engage in activities with the scientists from University of Maryland College Park.

The Magic of STEM Family Learning Activities: Throughout the year, Port Discovery features activities that focus on STEM related concepts. The goal is to help families learn that science is FUN and that we are all scientists!

Port Discovery Supports STEM Learning

STEM learning (Science, Technology, Engineering, and Math) is a vital component to childhood development. Port Discovery provides opportunities to spark children's interest in STEM subjects early in their lives, so we can inspire the next generation of scientists, architects, mathematicians, inventors, and many other important career choices. The natural curiosity that STEM learning produces helps children develop problem solving skills that are necessary to their overall development.

Port Discovery provides the following STEM opportunities for learning:

Exhibits

- **Nano - Imagine and Discover a World You Can't See!** (sponsored by the NISE Network, with funding from NSF): How small is nano? Enter the world of nanoscale science to explore the minds-on, hands-on activities to discover the importance of things that are too small for the eye to see. Build a carbon nanotube atom by atom like a scientist, explore ferrofluid, and try to balance our nano future!
- **NanoFabulous** (provided by the Materials Research Science and Engineering Center (MRSEC) at the University of Maryland with support from NSF and the University of Maryland Departments of Physics and Chemistry): An innovative mini-exhibition, NanoFabulous immerses children in a nanoscience lab. NanoFabulous takes nano one step further by giving visitors a glimpse of what it is like to be a nanoscientist. Designed to excite children about careers in the fields of STEM, visitors can experience what it's like to work in a laboratory. They can enter a simulated clean room where they learn about what makes a clean room "clean", dress researchers in the appropriate clothing, build a model nano transistor, and more.
- **Wonders of Water** provides children with interactive, learning experiences that teach scientific concepts including: the water cycle, evaporation, buoyancy, and water pressure.
- **Miss Perception's Mystery House** engages children in problem solving to unravel the mystery within each room.

Programs

- *Small Wonders Science Time and Exploration Station:* Children can participate in a hands-on table top activity based on a variety of STEM themes, including: hoop gliders, iridescent art, and more!
- *Pop Up Science:* Each session features a simple, interactive science demonstration by Scientist Sarah, Port Discovery's STEM Coordinator.
- *Freaky Friday Science Labs:* Every Friday in September, special science labs provided by our partners give children the opportunity to experience the fun of science in a unique setting.
- *Special Science Series* (paid program): Throughout the year, special science topics are covered more in depth for the budding scientists in your life. Spaces in these series sessions are limited and must be booked in advance. Prices on these series vary by topic. Please check our website for more details.

Special Events

- *STEM in Spring* celebrates the excitement of science, technology, engineering, and math during Maryland Public School's spring break. During *STEM in Spring*, Port Discovery hosts special programs and partners with organizations that specialize in STEM learning, including: Howard University Nano Express, MD Biolab, NASA, to present hands-on activities.
- *Nano Day:* The annual Nano Day is held during Maryland Public School's spring break, and is dedicated to learning about the exciting study of nanoscale science! Children learn about a world that is too small for the eye to see, how scientists study nanoscale, and how it will affect their world.